

Purchase Order Receipt Listing

Tuesday, May 02, 2017 10:37:12 AM

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All Vendors	PO ID PO36046	Receipt Dates from 5/1/2017 to 5/1/2017	All Line Item Types
All Item ID/GL/WOs	All Rec. Employees	All Currencies	Grouped by Vendor ID

All amounts are calculated in domestic currency.

Page 1 of 2

Purchase Order ID/ Curr Type	Line Nbr/ Insp Req	Project ID	Reference/ Cert Std	PO U/M / Stock U/M	Required Date	Recv Date/ Recv Emp	Recv Qty (PO U/M)	Cost Per Unit/ Recv Value	Inspected Qty/ Rejected Qty (PO U/M)	MRB Qty/ MRB Reject Qty	Book Amt
VendorID	Vendor Name	VU-TW	W001	TW Metals	Required Qty	Required Date	Recv Qty (PO U/M)	Cost Per Unit/ Recv Value	Inspected Qty/ Rejected Qty (PO U/M)	MRB Qty/ MRB Reject Qty	Book Amt
PO36046	1 USD	No	M304TR0.500W.035 304 RD Tube .500 x f .035W	5/2/2017 48.0000	5/1/2017 PLOU01	60.0000	0.0000	0	0	\$0.00	
	2 No	m137415	M304TR0.500W.049 304 RD Tube .500 x f .049W	5/2/2017 20.0000	5/1/2017 PLOU01	20.0000	0.0000	0	0	\$0.00	
	3 No	m137415	M304TR0.675W.091 304 RD Tube .675 x f .091W	5/2/2017 40.0000	5/1/2017 PLOU01	46.5830	0.0000	0	0	\$0.00	
	4 No	m137415	M304TR0.750W.049 304 RD Tube .750 x f .049W	5/2/2017 80.0000	5/1/2017 PLOU01	80.0000	0.0000	0	0	\$0.00	
	5 No	m137415	M4130NT0.750W.04 4130 RD Tube .750 f x.049W	5/2/2017 20.0000	5/1/2017 PLOU01	23.9170	0.0000	0	0	\$0.00	
	6 No	m137415	M4130NT0.750W.08 4130 RD Tube .750 f x.083W	5/2/2017 20.0000	5/1/2017 PLOU01	20.3330	0.0000	0	0	\$0.00	
	7 No	m137415	M6061T6T0.3125W.0 f 311C ALUM TUBE .3125 f x.058W	5/2/2017 20.0000	5/1/2017 PLOU01	24.0000	0.0000	0	0	\$0.00	

Purchase Order ID/ Curr Type	Line Nbr/ Insp Req	Project ID	Reference/ Description/ Cert Std	PO U/M / Stock U/M	Required Date Required Qty	Recv Date/ Recv Emp	Recv Qty (PO U/M)	Cost Per Unit/ Recv Value	Inspected Qty/ Rejected Qty (PO U/M)	MRB Qty/ MRB Reject Qty	Book Amt
PO36046	8	VU-TWM001	TW Metals	71401-45	5/2/2017 1.0000	5/1/2017 PLOU01	1.0000	0.0000	0.0000	0	\$0.00

Total Received Quantity: 275.8330
 Total Qty to Inspect (PO U/M): 0.0000
 Total Reject Quantity: 0.0000
 Total Receipt Value: \$0.00
 Total Balance Due Quantity: 0.0000



O'Neal High-Performance Metals Group



Packing
Slip

ORDER NO.: 80851800 FROM: CHIC PAGE 1

CUST NUMBER: 1203820
SOLD TO:
DART AEROSPACE LTD
1270 ABERDEEN ST
HAWKESBURY ON
CANADA

NET WGT:
CN K6A 1K7

93.270 REQ. DATE: 05/02/17 EARLY
SHIP TO:
DART AEROSPACE LTD
1270 ABERDEEN ST
HAWKESBURY ON
ONTARIO CANADA

CN K6A 1K7

SALESPERSON: GLENN SCOTT
TERMS: NET 30 DAYS
F.O.B.: DESTINATION
CUST ORD NO.: PO36046

SHIP BY: 04/26/17
VIA: COMMON CARRIER
FREIGHT: PREPAID
RELEASE NO.:
RECEIVING PHONE:

LINE ITEM DESCRIPTION

0001 36476 SMLS CD 316/L A269 1/2 OD X .035 WA

CLN# ORD QTY INVOICE QTY
60.000 FT 60.000 FT

SHIPPED QTY
60.000 FT

WIDTH
20' ML

WT
10.426

PCS
3

** 1 TEST REPORTS REQUIRED **
** 1 CERTS REQUIRED **

ECCN: 2B999.g Export License: NLR
PO: 49351216 HT: YX1506679 PC: 3
MLT: CHINA MFG: CHINA

Expiration Date: 0/00/00
UOM

CUSTOMER QTY:
SLB/CL:-

0002 36506 SMLS CD 304/L A269 1/2 OD X .049 WA

CLN# ORD QTY INVOICE QTY
20.000 FT 20.000 FT

SHIPPED QTY
20.000 FT

20' ML
WT
4.718

PCS
1

** 1 TEST REPORTS REQUIRED **
** 1 CERTS REQUIRED **

ECCN: 2B999.g Export License: NLR
PO: 49339196 HT: YX1506712 PC: 1
MLT: CHINA MFG: CHINA

Expiration Date: 0/00/00
UOM

CUSTOMER QTY:
SLB/CL:-

0003 38420 SMLS 304/L A-312 3/8 SCH 40

CLN# ORD QTY INVOICE QTY
40.000 FT 46.583 FT

SHIPPED QTY
46.583 FT

17/24 FT
WT
26.685

PCS
2

** 1 TEST REPORTS REQUIRED **
** 1 CERTS REQUIRED **

ECCN: 2B999.g Export License: NLR
PO: 49365461 HT: 11H347 PC: 2
MLT: CHINA MFG: CHINA

Expiration Date: 0/00/00
UOM

CUSTOMER QTY:
SLB/CL: LRZM39

SD452

1
THANK YOU FOR THIS ORDER

TERMS AND CONDITIONS APPLICABLE TO THE SALE OF THESE
PRODUCTS ARE SET FORTH ON OUR WEBSITE FOR YOUR CAREFUL
REVIEW.
<http://www.twmetals.com/invoice-terms.html>



O'Neal High-Performance Metals Group



Packing
Slip

ORDER NO.: 80851800 FROM: CHIC PAGE 2

CUST NUMBER: 1203820 NET WGT: 93.270 REQ. DATE: 05/02/17 EARLY
SOLD TO: SHIP TO:
DART AEROSPACE LTD
1270 ABERDEEN ST
HAWKESBURY ON
CANADA CN K6A 1K7
ONTARIO CANADA CN K6A 1K7

SALESPERSON: GLENN SCOTT
TERMS: NET 30 DAYS
F.O.B.: DESTINATION
CUST ORD NO.: PO36046

LINE ITEM DESCRIPTION
0004 36860 SMLS CD 304/L A269 3/4 OD X .049 WA

CLN# ORD QTY INVOICE QTY SHIPPED QTY LENGTH
80.000 FT 80.000 FT 80.000 FT 20' CL
WT 29.338 PCS 4

** 1 TEST REPORTS REQUIRED **
** 1 CERTS REQUIRED **

ECCN: 2B999.g Export License: NLR
PO: 49334360 HT: YX1501783 PC: 4 Expiration Date: 0/00/00
MLT: CHINA MFG: CHINA CUSTOMER QTY:
SLB/CL:- UOM

0005 33047 CDS 4130 6736 3/4 X .049

CLN# ORD QTY INVOICE QTY SHIPPED QTY LENGTH
20.000 FT 23.917 FT 23.917 FT 17/24 FT
WT 8.771 PCS 1

** 1 TEST REPORTS REQUIRED **
** 1 CERTS REQUIRED **

ECCN: 9A991.d Export License: NLR
PO: 49335280 HT: 593355 PC: 1 Expiration Date: 0/00/00
MLT: MFG: GERMANY CUSTOMER QTY:
SLB/CL: BENTELER* UOM

0006 33096 SMLS CD 4130 6736 3/4 OD X .083 WA

CLN# ORD QTY INVOICE QTY SHIPPED QTY LENGTH
20.000 FT 20.333 FT 20.333 FT 17/24 FT
WT 12.022 PCS 1

** 1 TEST REPORTS REQUIRED **
** 1 CERTS REQUIRED **

ECCN: 9A991.d Export License: NLR
PO: 49362520 HT: 602384 PC: 1 Expiration Date: 0/00/00
MLT: GERMANY MFG: GERMANY CUSTOMER QTY:
SLB/CL: 1632158 UOM

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THANK YOU FOR THIS ORDER

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O'Neal High-Performance Metals Group



Packing
Slip

ORDER NO.: 80851800 FROM: CHIC PAGE 3

CUST NUMBER: 1203820 NET WGT: 93.270 REQ. DATE: 05/02/17 EARLY
 SOLD TO: SHIP TO:
 DART AEROSPACE LTD
 1270 ABERDEEN ST
 HAWKESBURY ON
 CANADA CN K6A 1K7
 ONTARIO CANADA CN K6A 1K7

SALESPERSON: GLENN SCOTT
 TERMS: NET 30 DAYS
 F.O.B.: DESTINATION
 CUST ORD NO.: PO36046

SHIP BY: 04/26/17
 VIA: COMMON CARRIER
 FREIGHT: PREPAID
 RELEASE NO.:
 RECEIVING PHONE:

LINE ITEM DESCRIPTION

0007 41723 D6061-T6 5/16 OD X .058 WA

CLN# ORD QTY INVOICE QTY
 24.000 FT 24.000 FT

SHIPPED QTY
 24.000 FT

WT
 1.310

PCS
 2

** 1 TEST REPORTS REQUIRED **

** 1 CERTS REQUIRED **

ECCN: EAR99 Export License: NLR
 PO: 49354489 HT: 388604 PC: 2
 Expiration Date: 0/00/00
 UOM
 MLT: UNITED STATES MFG: UNITED STATES
 CUSTOMER QTY:
 SLB/CL: 388604

9/9
 9/89
 BROKERS KUEHNE AND NAGEL LTD

		PACK INFO				
AREA	TYPE OF PKG	PKGS	GRS WEIGHT	WIDTH	LENGTH	HGHT
YRC	REDDICRATE	1.000	144.000	5.0000	300.0000	4
		1.000	144.000			

BY: CL
 RT 000-

UNLOAD TYPE: NONE SPECIFIED

SG1452

DATE SHIPPED

DATE FILLED

THANK YOU FOR THIS ORDER

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 PRODUCTS ARE SET FORTH ON OUR WEBSITE FOR YOUR CAREFUL
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O'Neal High-Performance Metals Group



Packing
Slip

ORDER NO.: 80851800 FROM: CHIC PAGE 4

CUST NUMBER:	1203820	NET WGT:	93.270	REQ. DATE:	05/02/17	EARLY
SOLD TO:	SHIP TO:					
DART AEROSPACE LTD	DART AEROSPACE LTD					
1270 ABERDEEN ST	1270 ABERDEEN ST					
HAWKESBURY ON	HAWKESBURY ON					
CANADA	ONTARIO CANADA					
	CN K6A 1K7				CN K6A 1K7	
SALESPERSON:	GLENN SCOTT	SHIP BY:	04/26/17			
TERMS:	NET 30 DAYS	235 TUBEWAY				
F.O.B.:	DESTINATION	CAROL STREAM	IL 60188			
CUST ORD NO.:	PO36046					
VIA:	COMMON CARRIER					
FREIGHT:	PREPAID					
RELEASE NO.:						
RECEIVING PHONE:						

"TW Metals MSDS data is available on our web site at www.twmetals.com. MSDS data can be found under the Technical Resources Tab, Product Statistics & Data and the TW Metals MSDS's heading. If you do not have web site access you may telephone 610-458-1300 and we will mail or fax a copy of our current MSDS data to your location."

"CERTIFICATE OF CONFORMANCE"

"TW Metals certifies that the material supplied on this purchase order and contained in the heat/lot number referenced above has been manufactured, inspected, and tested in accordance with the material specification. These records are on file at TW Metals. Packaging material for shipments to Europe and China consists of manufactured wood products and complies with the European emergency measures for coniferous non-manufactured wood packing material"

Authorized Test Report Clerk

Cynthia Limon

Date: 4/26/17

These commodities have been exported from the United States in accordance with the U.S. export control laws, export administrations regulations. Diversion contrary to U.S. law prohibited.

MILL TEST REPORT

Purchaser.: TW METALS-Carol Stream			Certificate No.: 2016-10-150						
Contract No.: TWM P.O.No.: M49351216			Date of Issue.: 2016.10.26						
Commodity: Stainless Steel Seamless Tubes			Specifications: ASTM A213-15c/ASME SA213-15/ASTM A269-15a EAW						
Process: Cold Drawn			Delivery Condition: OD Polished to 240 Grit						
Steel Grade	Heat Number	Lot Number	Dimensions		Quantity				
					Pieces	Feet			
TP316/TP316L	YX1506-679	9-108	1/2"x0.035"x20'		650			13,000	
Chemical Composition by Weight (%)									
Element	C	Mn	P	S	Si	Cr	Ni	Mo	Co
Requirements	≤0.035	≤2.00	≤0.045	≤0.030	≤1.00	16.00-18.00	10.00-14.00	2.0-3.0	-
Ladle Analysis	0.016	0.66	0.031	0.004	0.31	16.61	10.05	2.02	-
Product Analysis	0.021	0.65	0.038	0.004	0.32	16.79	10.08	2.03	-
Mechanical Properties									
Test Item	Elongation (% in 2")		Tensile Strength (PSI)			Yield Strength (PSI)			
			Rm			Rp / 0.2%			
Requirements	≥35		≥75,000			≥30,000			
Test Results	63/64		85,000/86,000			41,000/42,000			
Test Item	Reduction of Area Z (%)	Hardness	Cold Bend Test	Flaring Test	Flattening Test	Flange Test	P.M.I. Test		
Requirements	-	HRB≤80	-	22%	e=0.09	-	-	-	-
Test Results	-	74/76	-	Passed	Passed	-	-	-	OK
Test Item	Eddy Current Test	Air Underwater	Ultrasonic Test	Intergranular Corrosion Test		Macroscopic Inspection			
Requirements	ASTM E 426	-	-	ASTM A262 E	End Cut	Appearance			
Test Results	Passed	-	-	OK	OK	OK			

ISO 9001:2008 Certified by CAS 117 16 QU 0053-06 ROS

PED Certified by SZUTEST 2195-PED-1526002

Additional Remarks:

- (1) All tubes annealed to above 1900 Deg F and water quenched below 800 Deg F in 3 minutes
- (2) All tubes tested per ASTM A1016-14
- (3) Materials is NACE MR0103-2007 compliant (per Section 2.5)
- (4) Materials is NACE MR0175/ISO 15156-2003 compliant (per Section 4.2.1)
- (5) In Compliance with EN 10204-3.1
- (6) In Compliance with RoHS Stipulation
- (7) No weld repair performed
- (8) Free from mercury contamination
- (9) Free from radioactive contamination
- (10) Billets melt and pipes/tubes manufactured in China
- (11) All tubes 100% PMI tested
- (12) All tubes 100% Eddy Current tested

CANNOT CERTIFY COMPLIANCE
FAR BAA / DFARS BAA / FAR TAA

By:



James Shi / Manager
Quality Control Department

We hereby certify that this report is true and correct.

Jiangsu Pufa Stainless Steel Tube Co., Ltd.
No. 99, Xuean Middle Road, Dongchen Town, Rugao City, Jiangsu Province, P.R.China

MILL TEST REPORT

Purchaser.: TW METALS-Carol Stream	Certificate No.: 16-3-54
Contract No.: TWM P.O.No.: M49339196	Date of Issue.: 2016.3.31
Commodity: Stainless Steel Seamless Tubes	Specifications: ASTM A213-15c/ASME SA213-15/ASTM A269-15a EAW
Process: Cold Drawn	Delivery Condition: OD Polished to 240 Grit

Steel Grade	Heat Number	Lot Number	Dimensions	Quantity	
				Pieces	Feet
TP304/TP304L	YX1506-712	2-109	1/2" x 0.049" x 20'	1000	20,000

Chemical Composition by Weight (%)

Element	C	Mn	P	S	Si	Cr	Ni	Mo	Co
Requirements	≤0.035	≤2.00	≤0.045	≤0.030	≤1.00	18.00-20.00	8.00-12.00	-	-
Ladle Analysis	0.013	0.65	0.032	0.002	0.32	18.28	8.05	-	-
Product Analysis	0.017	0.61	0.033	0.002	0.28	18.31	8.55	-	-

Mechanical Properties

Test Item	Elongation (% in 2")		Tensile Strength (PSI)		Yield Strength (PSI)		
	Rm	Rp / 0.2%	Rp / 0.2%		Yield Strength (PSI)		
Requirements	≥35		≥75,000		≥30,000		
Test Results	61/62		93,000/94,000		40,000/41,000		
Test Item	Reduction of Area Z (%)	Hardness	Cold Bend Test	Flaring Test	Flattening Test	Flange Test	P.M.I. Test
Requirements	-	HRB≤80	-	22%	e=0.09	-	-
Test Results	-	76/78	-	Passed	Passed	-	OK
Test Item	Eddy Current Test	Air Underwater Pressure Test	Ultrasonic Test	Intergranular Corrosion Test	Macroscopic Inspection		
Requirements	ASTM E 426	-	-	ASTM A262 E	End Cut	Appearance	
Test Results	Passed	-	-	OK	OK	OK	

ISO 9001:2008 Certified by Intertek 110703068

PED Certified by SZUTEST 2195-PED-1526002

Additional Remarks:

- (1) All tubes annealed to above 1900 Deg F and water quenched below 800 Deg F in 3 minutes
- (2) All tubes tested per ASTM A1016-15
- (3) Materials is NACE MR0103-2007 compliant (per Section 2.5)
- (4) Materials is NACE MR0175/ISO 15156-2003 compliant (per Section 4.2.1)
- (5) In Compliance with EN 10204-3.1
- (6) In Compliance with RoHS Stipulation
- (7) No weld repair performed
- (8) Free from mercury contamination
- (9) Free from radioactive contamination
- (10) Billets melt and pipes/tubes manufactured in China
- (11) All tubes 100% PMI tested
- (12) All tubes 100% Eddy Current tested

CANNOT CERTIFY COMPLIANCE
FAR BAA / DFARS BAA / FAR TAA

By:



James Shi

James Shi / Manager
Quality Control Department

We hereby certify that this report is true and correct.

Shanghai Pufa Stainless Steel Pipe Factory
No. 59, Shuangye Road, Wanggang, New Pudong District, Shanghai, China

MILL TEST REPORT

Purchaser.: TW METALS-Carol Stream			Certificate No.: 15-11-130											
Contract No.: TWM P.O.No.: M49334360			Date of Issue.: 2015.11.7											
Commodity: Stainless Steel Seamless Tubes	Specifications: ASTM A213-15/ASME SA213-13/ASTM A269-14e1 EAW													
Process: Cold Drawn	Delivery Condition: OD Polished to 240 Grit													
Steel Grade	Heat Number	Lot Number	Dimensions			Quantity								
						Pieces	Feet							
TP304/TP304L	YX1501-783	9-40	3/4" x 0.049" x 20'			285	5,700							
Chemical Composition by Weight (%)														
Element	C	Mn	P	S	Si	Cr	Ni	Mo	Co					
Requirements	≤0.035	≤2.00	≤0.045	≤0.030	≤1.00	18.00-20.00	8.00-12.00	-	-					
Ladle Analysis	0.012	0.68	0.031	0.001	0.37	18.35	8.05	-	-					
Product Analysis	0.019	0.70	0.033	0.002	0.39	18.37	8.31	-	-					
Mechanical Properties														
Test Item	Elongation (% in 2")			Tensile Strength (PSI) Rm			Yield Strength (PSI) Rp / 0.2%							
	≥35			≥75,000			≥30,000							
Requirements	63/64			87,000/88,000			34,000/35,000							
Test Item	Reduction of Area Z (%)	Hardness	Cold Bend Test	Flaring Test	Flattening Test	Flange Test	P.M.I. Test							
Requirements	-	HRB≤80	-	22%	e=0.09	-	-							
Test Results	-	75/77	-	Passed	Passed	-	OK							
Test Item	Eddy Current Test	Air Underwater Pressure Test	Ultrasonic Test	Intergranular Corrosion Test	Macroscopic Inspection									
Requirements	ASTM E 426	-	-	ASTM A262 E	End Cut	Appearance								
Test Results	Passed	-	-	OK	OK	OK								

ISO 9001:2008 Certified by Intertek 110703068

PED Certified by SZUTEST 2195-PED-1526002

Additional Remarks:

- (1) All tubes annealed to above 1900 Deg F and water quenched below 800 Deg F in 3 minutes
- (2) All tubes tested per ASTM A1016-14
- (3) Materials is NACE MR0103-2007 compliant (per Section 2.5)
- (4) Materials is NACE MR0175/ISO 15156-2003 compliant (per Section 4.2.1)
- (5) In Compliance with EN 10204-3.1
- (6) In Compliance with RoHS Stipulation
- (7) No weld repair performed
- (8) Free from mercury contamination
- (9) Free from radioactive contamination
- (10) Billets melt and pipes/tubes manufactured in China
- (11) All tubes 100% PMI tested
- (12) All tubes 100% Eddy Current tested

CANNOT CERTIFY COMPLIANCE
FAR BAA / DFARS BAA / FAR TAA

By:

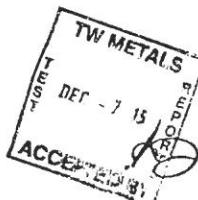


James Shi

James Shi / Manager
Quality Control Department

We hereby certify that this report is true and correct.

Shanghai Pufa Stainless Steel Pipe Factory
No. 59, Shuangye Road, Wanggang, New Pudong District, Shanghai, China



Benteler Steel/Tube GmbH
Postfach 13 40
33043 Paderborn
Deutschland
Tel.: + 49.5254.81-0 Fax: + 49.5254.13666

BENTELER ▽

Steel/Tube

ABNAHMEPRÜFZEUGNIS EN 10204-3.1
INSPECTION CERTIFICATE EN 10204-3.1
CERTIFICAT DE RECEPTION EN 10204-3.1

Dokument-Nr.: 41-890052/001/P
Document No.:
No. du document:

Prüf-Nr.: 3
Inspection No.:
No. du certificat:

Blatt: 3 / 3
Page: 3 / 3
Page:

Zugversuch längs Vollprobe / Tensile test longitudinal Full section test specimen / Essai de traction longitudinale Eprouvette à section complète

Pos. Proben-Nr. Schmelzen-Nr. Probenabmessung Streckgrenze Zugfestigkeit Dehnung
Item Specimen No. Heat No. Specimen dimensions Yield strength Tensile strength Elongation
Poste No. de l'éprouv. No. de coulée Dimensions de l'éprouv. Limite élastique

Anforderungen Requirements mm Rp 0,2 % Rm A2"
Exigences mm MIN 75000 MIN 95000 % MIN 12,00
Rp 0,2 %
PSI
MIN 75000
MIN 95000
%
MIN 12,00

0002 000001 5933355 19,02 X 1,22 120236 129229 18,00
0002 000002 5933355 19,02 X 1,22 120962 128649 18,00
0002 000003 5933355 19,02 X 1,22 121832 129374 18,00
0002 000004 5933355 19,02 X 1,22 124152 128649 18,00

Randentkohlung / Surface decarburization / Décarburation superficielle

Pos. / Item / Poste: 0002
acc. MIL-T-6736B / AMS-T-6736B, decarburization outside max. 0.23 mm, decarburization inside max. 0.305 mm

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Benteler Steel/Tube GmbH
 Residenzstraße 1
 33104 Paderborn
 Germany
 Tel.: 05254.81-0 Fax: 49.5254.13666

BENTELER ▶

Steel/Tube

Abnahmeprüfzeugnis EN 10204-3.1 / Anhang
Inspection Certificate EN 10204-3.1 / appendix
 Certificat de réception EN 10204-3.1 / appendix

Dokument-Nr.
Document No.:
 No. de document:

41-890052/001/P

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1 of 1

Halbzugsuntersuchung: Stahlsorte 4130 / Semi finished product examination: grade 4130 / Produit semi-fin: nuance 4130

Schmelzen-Nr. Heat No. Coulée No.	Position Item Poste	Korngröße Grain size Grosseur de grain (ASTM-E 112)	Härbarkeit (min. Anforderungen) Hardenability (min. requirements) Tremabilité (exigence min.) (ASTM-A 255)	Magnetpulverprüfung Magnetic particle inspection Essai à la poudre magnétique (AMS 2301G / 2840J)	Makrostruktur test Macrostructure test Essai de macrostructure (ASTM-E 381)			
					min. 5	J(5/16") min. 35 HRC	J(8/16") min. 28 HRC	F max. 0,34
592355	002	9	42	33	0,020	0,015	S 2	R 1
			Outside 0,000 mm	Inside 0,000 mm			C 2	

Decarburization
Depth

Der Stahl ist frei von Quecksilberverunreinigungen. / The steel is free of mercury contamination. / L'acier est libre des contaminations de mercure.

Paderborn Schloß Neuhaus, 17.08.2015
 Tel.: (0)5254.81-201760 Fax: (0)5254.81-201752

BENTELER ▶

Steel/Tube GmbH **TW METALS** REPORTS
 Abnahmbeauftragter **T** OCT 06 2015 **S** T
 Inspection representative **T** Controlleur **S** T
 Thomas Gollan **Thomas Gollan**
 Annie Pearson **Annie Pearson**

BNAHMEPRÜFZEUGNIS EN 10204-3.1

INSPECTION CERTIFICATE EN 10204-3.1
CERTIFICAT DE RECEPTION EN 10204-3.1
N 10204-2005-01

Benteler Steel/Tube GmbH - Postfach 1340 - 33043 Paderborn - Deutschland

TW Metals

The Aboretum, Suite 204
760 Constitution Drive
EXTON PA 19341

USA

Dokument-Nr.: 41-991981/001/P
Document No.:
No. du document: 46004784TW M49362520
Kunden-Bestell-Nr.:
Purchase Order No.:
No. de commande du client:
Benteler Auftrags-Nr.: 1632158
Benteler Order No.:
No. de commande Benteler:
Versandanzeigen-Nr.: 4186709
Dispatch Note No.:
No. d'avis d'expédition:
Produkt: NAHTLOSE STAHLROHRE
Product: SEAMLESS STEEL TUBES
Produit: TUBES D'ACIER SANS SOUDURE

Prüf-Nr.: 1 / 4
Inspection No.:
No. du certificat:
Hersteller: Warmrohrwerk/Ziherei
Manufacturer: [DIN EN ISO 9001 ISO/TS-16949 CERTIFIED BY TUEV NORD CERTI]
Produkteur: [PED 2014/68/EU CERTIFIED BY TUEV NORD SYSTEMS]
Herstellerzeichen: ▲
Manufacturer's brand:
Marque du producteur:
Stempel des Abnahmbeauftragten: WA
Stamp of the inspection representative:
Poinçon du contrôleur:
Stahlerschmelzungsverfahren: ELEKTROSTAHL
Steelmaking process: ELECTRIC FURNACE
Procédé d'élaboration de l'acier: FOUR ELECTRIQUE

Lieferbedingungen: AMS-T-6736B-08 Type 1, ASTM-A 519-2006, MIL-T-6736B Type 1, AMS6360 Rev. M, AMS 2301K

Terms of delivery:

Conditions de livraison:

Maße - Toleranzen: AMS 2253E-83, Aircraft Type, Seamless, Cold Finished

Dimensions-tolerances:

Dimensions-tolérances:

Stahlsorte:

Steel grade:

Nuance d'acier:

Lieferzustand:

Delivery condition:

Etat de livraison:

Condition N

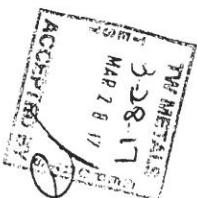
Produktkennzeichnung:

FSD: BENTELER AMS6360M-AMS-T-6736 B 1-MIL-T-6736 B 1-AMS 2301K 4130 Condition N HEAT-NO.
CD AQS DIMENSIONS WA GERMANY

Product marking:

Marquage du produit:

AEZ = Anzintenbeschriftung, Etching ink marking, Gravure à l'encre . FK = Farbkennzeichnung, color marking, marquage par couleur . FS = Farbschabloneierung, paint stencilling, marquage par peinture . FSD = Farbstrahldrucker, Color jet printer, imprimante à jet d'encre de couleur . LK = Laserkennzeichnung, Laser marking, Marquage laser . PKE = Etikett kennzeichnung, tag marking, marquage sur étiquette . PS = Prägestempel, die stamp, marquage par pointonnage . TS = Tintenstrahkkennzeichnung, ink jet spray marking, imprimante à jet d'encre .



ABNAHMEPRÜFZEUGNIS EN 10204-3.1

INSPECTION CERTIFICATE EN 10204-3.1
CERTIFICAT DE RECEPTION EN 10204-3.1

BENTELER 

Steel/Tube

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Pos.	Stück	Maße	Gesamtlänge	Gewicht	Schmelzen-Nr.	Prüfdruck	Rohr-Nr.-Gruppe	Vielfachlängen
Item	Number	Dimensions	Length total	Weight	Heat No.	Test pressure	Tube number group	Multiple lengths
Poste	Nombre	Dimensions	Longueur totale	Poids	No. de coulée	Pression d'épreuve	Série de no. des tubes	Longueurs multiples
0016	40	0,750" O.D. * 0,083" WT	813,65	472	602384			
		20 FT - 24 FT						

ichmelzenanalyse [%] / Heat analysis [%] / Analyse sur coulée [%]

Pos.	Schmelzen-Nr.	C	SI	MN	P	S	CR	MO	NI	CU
Item	Heat No.									
Poste	No. de coulée									
0016	602384	0,310	0,250	0,53	0,011	0,003	0,89	0,19	0,08	0,13

roduktanalyse [%] / Product analysis [%] / Analyse sur produit [%]

Pos.	Schmelzen-Nr.	C	SI	MN	P	S	CR	MO	NI	CU
Item	Heat No.									
Poste	No. de coulée									
0016	602384	0,300	0,270	0,53	0,011	0,002	0,87	0,19	0,08	0,15

üfergebnisse / Test results / Résultats des essais

Die Rohre wurden zerstörungsfrei geprüft:

The tubes are non destructive tested:

Les tubes ont passé un essai non destructif:

ET-test: acc. to ASTM-A 450; ET - Test method: acc. to ASTM-E 309; for imperfections; ET-test: ET with rotating pancake coils; according to EN 10246-3; imperfections;

Notch depth: 0,30 mm; notch width < = notch depth; notch length min. 2 x transducer width (max. 50 mm)

Augsensichtskontrolle:

PASSED

PASSED

PASSED

PASSED

Visual inspection:

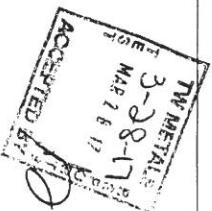
Examen visuel:

ergebnisse der mechanischen Prüfung / Results of mechanical testing / Résultats des essais mécaniques

Die Probennahme erfolgte an Vielfachlängen.

The sampling was carried out on multiple lengths.

L'échantillonage était réalisé aux longueurs multiples.



BENTELER 
Steel/Tube

Steel/Tube

IBNAHMEPRÜFZEUGNIS EN 10204-3.1
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CERTIFICATE OF INSPECTION EN 10204-3.1

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Universität Bremen BT 1000

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Pos. tem oste	Proben-Nr. Specimen No. No. de l'éprouv.	Schmelzen-Nr. Heat No. No. de coulée	Probenabmessung Specimen dimensions Dimensions de l'éprouv.	Streckgrenze Yield strength Limite élastique	Zugfestigkeit Tensile strength Résistance à la traction	Dehnung Elongation Allongement
Requirements éxigences			Rp 0,2 %	Rm	A2"	1. Formel 1. Formule
			mm	KSI MIN 75	KSI MIN 95	1. Formel 1. Formule
0016	000001	602384	19,02 X	2,10	105	118 20,00
0016	000002	602384	19,02 X	2,10	105	119 20,00
0016	000003	602384	19,02 X	2,10	104	119 20,00
0016	000004	602384	19,02 X	2,10	103	119 20,00
0016	000005	602384	19,02 X	2,10	104	119 20,00

Landentkohlung / Surface decarburization / Décarburation superficielle

Pos. / Item / Poste: 0016

acc. to AMS-6360, partial decarburization outside max. 0.014 in, partial decarburization inside max. 0.014 in, partial decarburization outside and inside max. 0.018 in, partial decarburization outside and inside max. 0.457 mm, without total decarburization; partial decarb. out. max.: 0,356 mm; partial decarb. ins. max.: 0,356 mm

Remark / Remarque

POS. / Item / Poste: 0016

CEI indicate remarks: In

certificate remarks: The steel grade corresponds to MIL-1-6368B, JAMS 6360M, material free from mercury contamination, FAR BAA: 52.225-1 CANNOT COMPLY, DFARS BAA: 252.225-7001 CAN COMPLY, FAR TAA: 52.225.5 CAN COMPLY, No weld repair has been made.

סמלים וסימנים

Macroscopic examination: acc to ASTM E 381

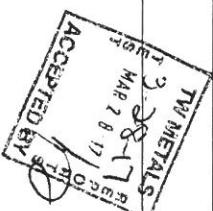
Pos. / Item / Poste: 0016

Magnetic particle inspec.: acc. to AMS 2301K/ASTM-E 1444, on prematerial

Fus. / Item / Poste: 0018

Grain size: acc. to ASTM-E 112; Grain size and liner: 3; Grain size: Longitudinal structure micrography; Oh prematerial

Verkäufer(in) / Sales Personnel / Personale charme : Mr Schwarz Tel: 06361 91 301311 Env. 30130



Benteler Steel/Tube GmbH
Ostrach 13 40
3043 Paderborn
Deutschland
Tel.: +49.5254.81-0 Fax: +49.5254.13666

BENTELER ▶

Steel/Tube

ABNAHMEPRÜFZEUGNIS EN 10204-3.1

INSPECTION CERTIFICATE EN 10204-3.1
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Document No.:
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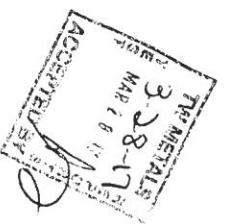
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No. du certificat:

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Paderborn Schloß Neuhaus, 09.03.2017, TEL.: 05254.81-201768 FAX: 05254.81-201752

Abnahmevertrags
Inspection representative
Contrôleur

i. A. THOMAS GOLLAN / Tat



Es wird bestätigt, daß die gelieferten Erzeugnisse den techn. Lieferbedingungen des Auftrages entsprechen. Dieses Dokument wurde mittels EDV erstellt und ist ohne Unterschrift rechtsgültig.
We certify that the supplied products comply with the order specification. This document was prepared by means of electronic data processing and is valid without signature.
Nous attestons que les produits livrés sont conformes aux stipulations de la commande. Ce document a été établi par traitement électronique de l'information et est valide sans signature.

Abnahmeprüfzeugnis EN 10204-3.1 / Anhang
Inspection Certificate EN 10204-3.1 / appendix
Certificat de réception EN 10204-3.1 / appendix

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Halbzeuguntersuchung: Stahlsorte 4130 / **Semi finished product examination: grade 4130** / Produit semi-fini: nuance 4130

Schmelzen-Nr. Heat No. Coulée No.	Position Item Poste	Korngröße Grain size (ASTM-E 112)	Härtbarkeit (min. Anforderungen) Hardenability (min. requirements) Trempabilité (exigence min.) (ASTM-A 255)	Magnetpulverprüfung Magnetic particle inspection Essai à la poudre magnétique (AMS 2301 K/ASTM- 1444)	Makroätzung Macrostructure test Essai de macrostructure (ASTM-E 381)			
		min. 5	J(5/16") min. 35 HRC	J(8/16") min. 28 HRC	F max. 0,34	S max. 0,25	max. S 2	max. R 1
602384	016	9	42	34	0,010	0,005	S 2	R 1
Decarburization Depth		Outside 0,000 mm	Inside 0,000 mm					C 2

Der Stahl ist frei von Quecksilberverunreinigungen. / The steel is free of mercury contamination. / L'acier est libre des contaminations de mercure.

Paderborn Schloß Neuhaus, 09.03.2017
Tel.: (0)5254.81-201760 Fax: (0)5254.81-201752

Abnahmebeauftragter
Inspection representative
Contrôleur

Thomas Gollan





PRECISION TUBE CO.
287 WISSAHICKON AVE.
NORTH WALES PA 19454

Control No: 1604

CERTIFIED TEST REPORT

CUSTOMER PURCHASE ORDER NO.		CUST. ORD. NO.	PRECISION TUBE P/N		
49354489 LINE 001		422327	24A031250580005		
SOLD: TW METALS TO 175 TUBEWAY FOREST PARK, GA 30298 UNITED STATES			SHIP: TW METALS TO 175 TUBEWAY FOREST PARK, GA 30298 UNITED STATES		
QUANTITY ORD.	DESCRIPTION			QTY. SHIPPED	DATE SHIPPED
1824 FT	METAL - 6061 ALUM TEMPER - T6 SPEC - AMS 4082P ASTM-B-210-12 AMS-WW-T-700/6C LENGTH - 12 FT LGTH TOL +.1250 IN -.0000 IN SHAPE - ROUND FINISH - STRAIGHT EXACT LENGTHS OD .3125 +.0030 -.0030 ID WALL .0580 +.0040 -.0040			2004 FT	08/05/16
MECHANICAL PROPERTIES					
SAMPLE #	TENSILE STRENGTH (P.S.I.)	YIELD STRENGTH (P.S.I.)	ELONGATION IN 2 INCHES (%)	ROCKWELL HARDNESS	AVERAGE GRAIN SIZE (MM.)
1	45,775	40,439	17		
TEST REPORTS					
DESTRUCTIVE TESTS				ACCEPTED BY	
				49354489 AUG 09 2016 <i>John</i>	
Comments: FAR BAA COMPLIES, DFARS BAA COMPLIES, FAR TAA COMPLIES					
NON-DESTRUCTIVE TESTS					
EDDY CURRENT: PASS					
CHEMICAL COMPOSITION					
ALLOY: 6061	HEAT: TRACEABILITY #: 388604				
DAS	RAW MATL VENDOR: PTC2249 - Kaiser Aluminum				
9	Si	Fe	Cu	Mn	Mg Cr Zn Ti Al
Min 9-89	0.40	0.15		0.15	0.80 0.04
Max 9-89	0.80	0.70	0.40	0.15	1.20 0.35 0.25 0.15
OTHER ELEMENTS: 0.05 MAX EACH / 0.15 MAX TOTAL					

We hereby certify that the material has been manufactured and tested in accordance with the requirements of the applicable specifications and descriptions set forth on Precision Tube's sales acknowledgement. During the manufacturing, testing and inspection, the product did not come into direct contact with mercury or any of its compounds, nor with any mercury containing device employing a single boundary containment. Test results indicate that the material is compliant with the current revision of the RoHS Directive (2011/65/EU).

Melted and Manufactured in USA
QMS Registered to ISO 9001: 2008

By: Art Onaitis
Art Onaitis
QA Manager

08/05/16
Page: 1 of 1

AG

KAISER
ALUMINUM
FABRICATED PRODUCTS

Best in Class

CERTIFIED TEST REPORT

<http://Online.KaiserAluminum.com>

KAISER ALUMINUM
 FABRICATED PRODUCTS, LLC
 2425 STEVENS DRIVE
 RICHLAND, WA 99352

CUSTOMER PO NUMBER:		CUSTOMER PART NUMBER:		PRODUCT DESCRIPTION:		
PTC2249		SPIRIT-371850		5.400 LB/PC .500 LB/-0 LB 1.312 OD X .085 WALL ESRT		
KAISER ORDER NUMBER:	LINE ITEM:	SHIP DATE:	KAISER LOT NUMBER:	ALLOY:	TEMPER:	
320031	001	04/01/2016	50751-323	6061	O	
WEIGHT SHIPPED:	QUANTITY:	B/L NUMBER:	DIAM/DAF/THKNS:	WIDTH:	LENGTH:	
16135.000 LB	2913.000 PCS	004991			13.984 FT	
SHIP TO:			SOLD TO:			
PRECISION TUBE CO 287 WISSAHICKON AVENUE N. WALES, PA 19454 USA			MUELLER INDUSTRIES, INC PRECISION TUBE 8285 TOURNAMENT DRIVE STE. 150 MEMPHIS, TN 38125 USA			



Actual Physical Properties

REFERENCE	DASH#	SAMPLE#	UTS (KSI)	YTS (KSI)	%Elong in 2	HARDNESS	CONDUCT.	BEND
50751-323	0001	0002	17.3	5.9	26.7	NA N/A	N/A	N/A
50751-323	0001	0003	17.3	5.9	26.7	NA N/A	N/A	N/A
50751-323	0001	0004	17.3	5.4	27.2	NA N/A	N/A	N/A
50751-323	0001	0005	18.0	6.1	28.0	NA N/A	N/A	N/A
50751-323	0001	0006	17.4	5.7	26.4	NA N/A	N/A	N/A
50751-323	0001	0007	17.9	6.2	27.6	NA N/A	N/A	N/A
50751-323	0001	0008	17.5	5.8	26.6	NA N/A	N/A	N/A
50751-323	0001	0009	17.7	5.7	28.6	NA N/A	N/A	N/A
50751-323	0001	0010	16.9	5.6	25.2	NA N/A	N/A	N/A
50751-323	0001	0011	17.6	5.8	27.9	NA N/A	N/A	N/A
50751-323	0001	0012	17.8	6.9	27.4	NA N/A	N/A	N/A
50751-323	0001	0013	18.1	6.1	27.2	NA N/A	N/A	N/A
50751-323	0001	0014	17.4	5.7	28.3	NA N/A	N/A	N/A
50751-323	0001	0015	17.0	5.6	28.6	NA N/A	N/A	N/A
50751-323	0001	0016	18.2	5.8	26.6	NA N/A	N/A	N/A

Chemical Composition (wt%), Aluminum Remainder

LIMITS	Si	Fe	Cu	Mn	Mg	Cr	Zn	Ti	Pb	Bi	Zr	Ea	Tot
Maximum	0.80	0.70	0.40	0.15	1.20	0.35	0.25	0.15	NA	NA	NA	0.05	.15
Minimum	0.40	0.00	0.15	0.00	0.80	0.04	0.00	0.00	NA	NA	NA	0.00	.0
F75366	.58	.29	.22	.06	.98	.08	.05	.02	.00	.00	.00	.01	.02

Applicable Requirements:

ASTM-B241-12 NON-STENCILED ASTM-B221-13 ASTM-B345-11 AMS-QQ-A-200/8 97(R07) TYPE I
 UNS#A96061 Also conforms to EN 10204 3.1

**TEST REPORTS
 ACCEPTED BY**

49354489
 AUG 09 2016

LB
TW METALS

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Plant Serial: 00013829
 Kaiser Order Number: 320031
 Line Item: 001

X



Best in Class

CERTIFIED TEST REPORT
<http://Online.KaiserAluminum.com>

KAISER ALUMINUM
FABRICATED PRODUCTS, LLC
2425 STEVENS DRIVE
RICHLAND, WA 99352

Miscellaneous Notes

MANUFACTURED IN USA MELTED IN USA

MERCURY IS NOT A NORMAL BACKGROUND ELEMENT IN ALUMINUM ALLOYS. NEITHER MERCURY NOR ANY OF ITS COMPOUNDS ARE UTILIZED BY KAISER ALUMINUM IN THE MANUFACTURE OF THIS MATERIAL.

CERTIFICATION

Kaiser Aluminum Fabricated Products, LLC hereby certifies that metal shipped under this order has been inspected and tested and found in conformance with applicable specifications forming a part of the description set forth in Kaiser's sales acknowledgement form. Any warranty is limited to that shown on Kaiser's general terms and conditions of sale. Test reports are on file, subject to examination.

JOSEPH AMES, QUALITY MANAGER

**TEST REPORTS
ACCEPTED BY**

AUG 09 2016

John
TW METALS

Plant Serial: 00013829
Kaiser Order Number: 320031
Line Item: 001

MATERIAL RECEIPT INSPECTION FORM

MATERIAL: M304tRa500w.035
 DATE: MAY 02 2017

PO / BATCH NO.: PO36046/M137415

MATERIAL CERT REC'D: yes
 QUANTITY RECEIVED: 60'
 QUANTITY INSPECTED: 60'
 QUANTITY REJECTED: 0

THICKNESS ORDERED: .035
 THICKNESS RECEIVED: .032
 SHEET SIZE ORDERED: N/A
 SHEET SIZE RECEIVED: N/A

DESCRIPTION	NCR (Check Y/N)		COMMENTS
SURFACE DAMAGE	Y	(N)	
CORRECT FINISH	(Y)	N	
CORROSION	(Y)	(N)	
CORRECT GRAIN DIRECTION	(Y)	N	
CORRECT MATERIAL	(Y)	N	
CORRECT THICKNESS	(Y)	N	
PHOTO REQUIRED	Y	(N)	
CORRECT MATERIAL	(Y)	N	
CORRECT REF # TO LINK CERT	(Y)	N	45tm A269 HT # 1506679
CORRECT MATERIAL IDENTIFICATION	(Y)	N	
CORRECT M# ON THE MATERIAL	(Y)	N	
DOES THIS MATERIAL REQUIRE ENGINEERING SIGN OFF	Y	(N)	
DOES THIS REQUIRE AN EXTRUSION REPORT	Y	(N)	

CUT SAMPLE PIECE OF MATERIAL AND PERFORM A HARDNESS CHECK. RECORD RESULTS BELOW				
TYPE OF MATERIAL SIZE OF TEST SAMPLE HARDNESS / DUROMETER READING	HRC	HRB	DUR A	DUR D

testers located in the Quality Office

QC 18 INSPECTION	ENGINEERING SIGNOFF (if required)
INSPECTED BY: <u>CB</u> ^{DAS} ⁹ ⁹⁰⁰	SIGNED OFF BY: _____
DATE: <u>MAY 02 2017</u>	DATE: _____

Attach this inspection sheet with the corresponding material cert and remit to be scanned and received in

MATERIAL RECEIPT INSPECTION FORM

MATERIAL: M3047R0.500W.049
 DATE: MAY 02 2017

PO / BATCH NO.: PO36046/M137415

MATERIAL CERT REC'D: yes
 QUANTITY RECEIVED: 20
 QUANTITY INSPECTED: 20
 QUANTITY REJECTED: 0

THICKNESS ORDERED: .049
 THICKNESS RECEIVED: .048
 SHEET SIZE ORDERED: N/A
 SHEET SIZE RECEIVED: N/A

DESCRIPTION	NCR (Check Y/N)		COMMENTS
	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
SURFACE DAMAGE	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
CORRECT FINISH	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
CORROSION	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
CORRECT GRAIN DIRECTION	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
CORRECT MATERIAL	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
CORRECT THICKNESS	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
PHOTO REQUIRED	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
CORRECT MATERIAL	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<i>ASTM A369</i>
CORRECT REF # TO LINK CERT	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<i>HFFF YX1506712</i>
CORRECT MATERIAL IDENTIFICATION	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
CORRECT M# ON THE MATERIAL	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
DOES THIS MATERIAL REQUIRE ENGINEERING SIGN OFF	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
DOES THIS REQUIRE AN EXTRUSION REPORT	<input checked="" type="checkbox"/>	<input type="checkbox"/>	

CUT SAMPLE PIECE OF MATERIAL AND PERFORM A HARDNESS CHECK. RECORD RESULTS BELOW					
TYPE OF MATERIAL SIZE OF TEST SAMPLE HARDNESS / DUROMETER READING	HRC	HRB	DUR A	DUR D	

testers located in the Quality Office

QC 18 INSPECTION	ENGINEERING SIGNOFF (if required)
INSPECTED BY: <u>CB</u> <small>DAD</small> DATE: <u>MAY 02 2017</u>	SIGNED OFF BY: _____ DATE: _____

Attach this inspection sheet with the corresponding material cert and remit to be scanned and received in

MATERIAL RECEIPT INSPECTION FORM

MATERIAL: M3044R0675W.091
 DATE: MAY 02 2017

PO / BATCH NO.: PO36046/M137415

MATERIAL CERT REC'D: yes
 QUANTITY RECEIVED: 46'
 QUANTITY INSPECTED: 46'
 QUANTITY REJECTED: 0

THICKNESS ORDERED: .091
 THICKNESS RECEIVED: .084
 SHEET SIZE ORDERED: N/A
 SHEET SIZE RECEIVED: N/A

DESCRIPTION	NCR (Check Y/N)		COMMENTS
	Y	N	
SURFACE DAMAGE	Y	N	
CORRECT FINISH	Y	N	
CORROSION	Y	N	
CORRECT GRAIN DIRECTION	Y	N	
CORRECT MATERIAL	Y	N	
CORRECT THICKNESS	Y	N	
PHOTO REQUIRED	Y	N	
CORRECT MATERIAL	Y	N	schedule 40 As per drawing D2252 (Attach) PD.
CORRECT REF # TO LINK CERT	Y	N	WT# 11h347
CORRECT MATERIAL IDENTIFICATION	Y	N	
CORRECT M# ON THE MATERIAL	Y	N	
DOES THIS MATERIAL REQUIRE ENGINEERING SIGN OFF	Y	N	
DOES THIS REQUIRE AN EXTRUSION REPORT	Y	N	

CUT SAMPLE PIECE OF MATERIAL AND PERFORM A HARDNESS CHECK. RECORD RESULTS BELOW					
TYPE OF MATERIAL SIZE OF TEST SAMPLE HARDNESS / DUROMETER READING	HRC	HRB	DUR A	DUR D	

testers located in the Quality Office

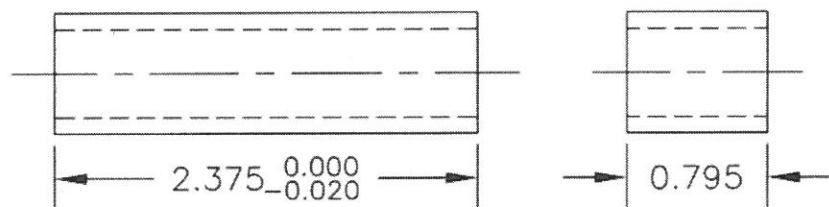
QC 18 INSPECTION	ENGINEERING SIGNOFF (if required)
INSPECTED BY: <u>CB</u> ^{DAD} DATE: <u>MAY 02 2017</u>	SIGNED OFF BY: _____ DATE: _____

Attach this inspection sheet with the corresponding material cert and remit to be scanned and received in

DART

DESIGN BW	DRAWN BY <i>FB</i>	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
CHECKED <i>IP</i>	APPROVED <i>100%</i>	DRAWING NO. D2282	REV. E SHEET 1 OF 2
DATE 05.06.07		TITLE HANDLE TUBES	SCALE 1:1

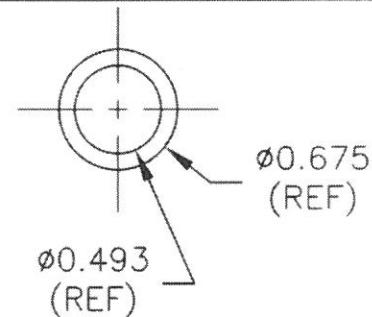
RELEASED
BS/09/16



D2282-3

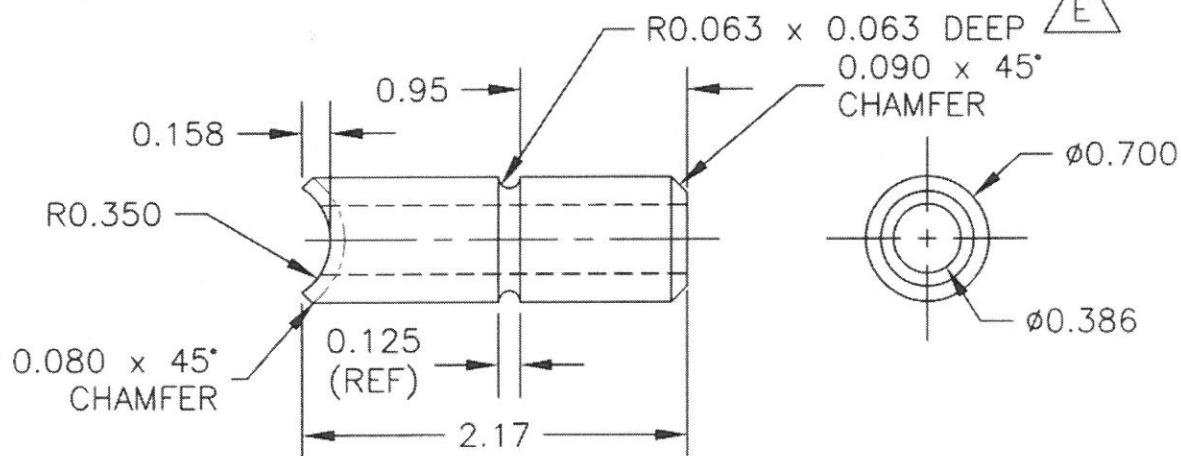
D

D2282-7



D2282-3/7 TUBE:

- 1) MATERIAL: T304/T316 3/8 SCHEDULE 40 (REF. DART SPEC. M304TR0.675W.091)
- 2) BREAK ALL UNMARKED SHARP EDGES 0.005 TO 0.010
- 3) ALL DIMENSIONS ARE IN INCHES
- 4) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED



D

D2282-5

D2282-5 STEM:

- 1) MATERIAL: AISI 304 STAINLESS STEEL (REF. DART SPEC. M304R0.750)
- 2) BREAK ALL UNMARKED SHARP EDGES 0.005 TO 0.010
- 3) ALL DIMENSIONS ARE IN INCHES
- 4) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED

E

MATERIAL RECEIPT INSPECTION FORM

MATERIAL: M304TR0.750W.049
 DATE: MAY 02 2017

PO / BATCH NO.: DC 36046/M137415

MATERIAL CERT REC'D: yes
 QUANTITY RECEIVED: 80'
 QUANTITY INSPECTED: 80'
 QUANTITY REJECTED: 0

THICKNESS ORDERED: .049
 THICKNESS RECEIVED: .047
 SHEET SIZE ORDERED: N/A
 SHEET SIZE RECEIVED: N/A

DESCRIPTION	NCR (Check Y/N)		COMMENTS
	Y	N	
SURFACE DAMAGE	Y	N	
CORRECT FINISH	N	N	
CORROSION	Y	N	
CORRECT GRAIN DIRECTION	Y	N	
CORRECT MATERIAL	Y	N	
CORRECT THICKNESS	Y	N	
PHOTO REQUIRED	Y	N	
CORRECT MATERIAL	Y	N	<i>ASTM A269</i>
CORRECT REF # TO LINK CERT	Y	N	<i>HT # YX1501783</i>
CORRECT MATERIAL IDENTIFICATION	Y	N	
CORRECT M# ON THE MATERIAL	Y	N	
DOES THIS MATERIAL REQUIRE ENGINEERING SIGN OFF	Y	N	
DOES THIS REQUIRE AN EXTRUSION REPORT	Y	N	

CUT SAMPLE PIECE OF MATERIAL AND PERFORM A HARDNESS CHECK. RECORD RESULTS BELOW					
TYPE OF MATERIAL SIZE OF TEST SAMPLE HARDNESS / DUROMETER READING	HRC	HRB	DUR A	DUR D	

testers located in the Quality Office

QC 18 INSPECTION	ENGINEERING SIGNOFF (if required)
INSPECTED BY: <u>EP</u> <u>DAS</u> DATE: <u>MAY 02 2017</u>	SIGNED OFF BY: _____ DATE: _____

Attach this inspection sheet with the corresponding material cert and remit to be scanned and received in

MATERIAL RECEIPT INSPECTION FORM

MATERIAL: M4130NT 0.750W.49

PO / BATCH NO.: PO36046/M137415

DATE:

MAY 02 2017

MATERIAL CERT REC'D: YES

THICKNESS ORDERED: .049

QUANTITY RECEIVED: 23.9'

THICKNESS RECEIVED: .047

QUANTITY INSPECTED: 23.9'

SHEET SIZE ORDERED: N/A

QUANTITY REJECTED: 0

SHEET SIZE RECEIVED: N/A

DESCRIPTION	NCR (Check Y/N)	COMMENTS
SURFACE DAMAGE	Y <input checked="" type="radio"/>	
CORRECT FINISH	Y <input checked="" type="radio"/>	N
CORROSION	Y <input checked="" type="radio"/>	N
CORRECT GRAIN DIRECTION	Y <input checked="" type="radio"/>	N
CORRECT MATERIAL	Y <input checked="" type="radio"/>	N
CORRECT THICKNESS	Y <input checked="" type="radio"/>	N
PHOTO REQUIRED	Y <input checked="" type="radio"/>	
CORRECT MATERIAL	Y <input checked="" type="radio"/>	MIL-T-6736
CORRECT REF # TO LINK CERT	Y <input checked="" type="radio"/>	H# 593355
CORRECT MATERIAL IDENTIFICATION	Y <input checked="" type="radio"/>	N
CORRECT M# ON THE MATERIAL	Y <input checked="" type="radio"/>	N
DOES THIS MATERIAL REQUIRE ENGINEERING SIGN OFF	Y <input checked="" type="radio"/>	
DOES THIS REQUIRE AN EXTRUSION REPORT	Y <input checked="" type="radio"/>	

CUT SAMPLE PIECE OF MATERIAL AND PERFORM A HARDNESS CHECK. RECORD RESULTS BELOW				
TYPE OF MATERIAL SIZE OF TEST SAMPLE HARDNESS / DUROMETER READING	HRC	HRB	DUR A	DUR D

testers located in the Quality Office

QC 18 INSPECTION	ENGINEERING SIGNOFF (if required)
INSPECTED BY: <u>CB</u> <small>DAD 9 389</small>	SIGNED OFF BY: _____
DATE: <u>MAY 02 2017</u>	DATE: _____

Attach this inspection sheet with the corresponding material cert and remit to be scanned and received in

MATERIAL RECEIPT INSPECTION FORM

MATERIAL: M4130NT0.750W083
 DATE: MAY 02 2017

PO / BATCH NO.: PO36046/M137415

MATERIAL CERT REC'D: yes
 QUANTITY RECEIVED: 20
 QUANTITY INSPECTED: 20
 QUANTITY REJECTED: R

THICKNESS ORDERED: .083
 THICKNESS RECEIVED: .078
 SHEET SIZE ORDERED: N/A
 SHEET SIZE RECEIVED: N/A

DESCRIPTION	NCR (Check Y/N)		COMMENTS
	Y	N	
SURFACE DAMAGE	<input checked="" type="radio"/>	<input type="radio"/>	
CORRECT FINISH	<input checked="" type="radio"/>	<input type="radio"/>	
CORROSION	<input checked="" type="radio"/>	<input type="radio"/>	
CORRECT GRAIN DIRECTION	<input checked="" type="radio"/>	<input type="radio"/>	
CORRECT MATERIAL	<input checked="" type="radio"/>	<input type="radio"/>	
CORRECT THICKNESS	<input checked="" type="radio"/>	<input type="radio"/>	
PHOTO REQUIRED	<input checked="" type="radio"/>	<input type="radio"/>	
CORRECT MATERIAL	<input checked="" type="radio"/>	<input type="radio"/>	<u>41E-1-6736</u>
CORRECT REF # TO LINK CERT	<input checked="" type="radio"/>	<input type="radio"/>	<u>44#602384</u>
CORRECT MATERIAL IDENTIFICATION	<input checked="" type="radio"/>	<input type="radio"/>	
CORRECT M# ON THE MATERIAL	<input checked="" type="radio"/>	<input type="radio"/>	
DOES THIS MATERIAL REQUIRE ENGINEERING SIGN OFF	<input checked="" type="radio"/>	<input type="radio"/>	
DOES THIS REQUIRE AN EXTRUSION REPORT	<input checked="" type="radio"/>	<input type="radio"/>	

CUT SAMPLE PIECE OF MATERIAL AND PERFORM A HARDNESS CHECK. RECORD RESULTS BELOW					
TYPE OF MATERIAL SIZE OF TEST SAMPLE HARDNESS / DUROMETER READING	HRC	HRB	DUR A	DUR D	

testers located in the Quality Office

QC 18 INSPECTION	ENGINEERING SIGNOFF (if required)
INSPECTED BY: <u>OB</u> DATE: <u>MAY 02 2017</u>	SIGNED OFF BY: _____ DATE: _____

Attach this inspection sheet with the corresponding material cert and remit to be scanned and received in

MATERIAL RECEIPT INSPECTION FORM

MATERIAL: M6061+67C.3125W.058

PO / BATCH NO.: 0036046/1137415

DATE: MAY 02 2017

MATERIAL CERT REC'D: yes

THICKNESS ORDERED: .058

QUANTITY RECEIVED: 241

THICKNESS RECEIVED: .058

QUANTITY INSPECTED: 241

SHEET SIZE ORDERED: N/A

QUANTITY REJECTED: 0

SHEET SIZE RECEIVED: N/A

DESCRIPTION	NCR (Check Y/N)	COMMENTS
SURFACE DAMAGE	Y <u>N</u>	
CORRECT FINISH	Y <u>N</u>	
CORROSION	Y <u>N</u>	
CORRECT GRAIN DIRECTION	Y <u>N</u>	
CORRECT MATERIAL	Y <u>N</u>	
CORRECT THICKNESS	Y <u>N</u>	
PHOTO REQUIRED	Y <u>N</u>	
CORRECT MATERIAL	Y <u>N</u>	<u>ASTM B 210</u>
CORRECT REF # TO LINK CERT	Y <u>N</u>	<u>H7 #388604</u>
CORRECT MATERIAL IDENTIFICATION	Y <u>N</u>	
CORRECT M# ON THE MATERIAL	Y <u>N</u>	
DOES THIS MATERIAL REQUIRE ENGINEERING SIGN OFF	Y <u>N</u>	
DOES THIS REQUIRE AN EXTRUSION REPORT	Y <u>N</u>	

CUT SAMPLE PIECE OF MATERIAL AND PERFORM A HARDNESS CHECK. RECORD RESULTS BELOW				
TYPE OF MATERIAL SIZE OF TEST SAMPLE HARDNESS / DUROMETER READING	HRC	HRB	DUR A	DUR D

testers located in the Quality Office

QC 18 INSPECTION	ENGINEERING SIGNOFF (if required)
INSPECTED BY: <u>CB</u> ⁹ _{9.89}	SIGNED OFF BY: _____
DATE: <u>MAY 02 2017</u>	DATE: _____

Attach this inspection sheet with the corresponding material cert and remit to be scanned and received in



Dart Aerospace Ltd.
1270 Aberdeen Street
Hawkesbury, ON K6A 1K7
Tel: 613 632 9577
Fax: 613 632 1053

PURCHASE ORDER

Purchase Order ID **PO36046**

Purchase Order Date 4/24/2017

PO Print Date 4/24/2017

Page Number 1 of 4

Order From : VU-TWM001

TW METALS
PO BOX 933014
ALTANTA, GA 31193-3014
US

Ship To : DART AEROSPACE LTD

1270 ABERDEEN
HAWKESBURY, ON K6A 1K7
CANADA

E-MAILED
APR 24 2017

Contact Name
Vendor Phone 585 768 5600

Ship To Contact
Ship To Phone
Ship Via: YRC COLLECT
Ship Acct:

Buyer Chantal Lavoie
Customer POID
Customer Tax # 10127-2607
Terms Net 30
Currency USD
FOB FCA - (Free Carrier)

Line Nbr	Reference Vendor Part Number	Description/ Mfg ID	Req Date/ Taxable Promise Date	CD	Req Qty/ Unit of Measure	PO Unit Price	Extended Price
1	M304TR0.500W.035	304 RD Tube .500 x .035W	5/2/2017 Yes 5/2/2017	48.00 f	60. f 3X	\$1.50	\$72.00
MATERIAL: AISI 304/316 SA SEAMLESS ROUND TUBING AS PER ASTM A213 OR AMSE SA213 OR ASTM A269							
2	M304TR0.500W.049	304 RD Tube .500 x .049W	5/2/2017 Yes 5/2/2017	20.00 f	2.80	\$2.80	\$56.00
MATERIAL: AISI 304/316 SA SEAMLESS ROUND TUBING AS PER ASTM A213 OR AMSE SA213 OR ASTM A269							
3	M304TR0.675W.091	304 RD Tube .675 x .091W	5/2/2017 Yes 5/2/2017	40.00 f	5.00	\$5.00	\$200.00
MATERIAL: AISI 304/316 SA SEAMLESS ROUND TUBING AS PER ASTM A213 OR AMSE SA213 OR ASTM A269							

Note:



Dart Aerospace Ltd.
1270 Aberdeen Street
Hawkesbury, ON K6A 1K7
Tel: 613 632 9577
Fax: 613 632 1053

PURCHASE ORDER

Purchase Order ID **PO36046**

Purchase Order Date 4/24/2017

PO Print Date 4/24/2017

Page Number 2 of 4

Order From : VU-TWM001

Ship To : DART AEROSPACE LTD

TW METALS
PO BOX 933014
ALTANTA, GA 31193-3014
US

1270 ABERDEEN
HAWKESBURY, ON K6A 1K7
CANADA

Contact Name
Vendor Phone 585 768 5600

Ship To Contact
Ship To Phone
Ship Via: YRC COLLECT
Ship Acct:

Buyer Chantal Lavoie
Customer POID
Customer Tax # 10127-2607
Terms Net 30
Currency USD
FOB FCA - (Free Carrier)

4 M304TR0.750W.049 304 RD Tube .750 x .049W 5/2/2017 Yes 5/2/2017

Line Total: \$200.00

\$2.10 \$168.00

44

MATERIAL: AISI 304/316 SA SEAMLESS ROUND TUBING
AS PER ASTM A213 OR AMSE SA213 OR ASTM A269

5 M4130NT0.750W.049 4130 RD Tube .750 x .049W 5/2/2017 Yes 5/2/2017

Line Total: \$168.00

\$6.00 \$120.00

143.50

143.50

MATERIAL: AISI4130N SEAMLESS STEEL TUBING
AS PER MIL-T-6736 OR AMS 6371/6360/6361
6362/6373/6374

DAS
9
9-89

Line Total: \$120.00

Note:



Dart Aerospace Ltd.
1270 Aberdeen Street
Hawkesbury, ON K6A 1K7
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Fax: 613 632 1053

PURCHASE ORDER

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Purchase Order Date 4/24/2017
PO Print Date 4/24/2017

Page Number 3 of 4

Order From : VU-TWM001

TW METALS
PO BOX 933014
ALTANTA, GA 31193-3014
US

Ship To : DART AEROSPACE LTD

1270 ABERDEEN
HAWKESBURY, ON K6A 1K7
CANADA

Contact Name
Vendor Phone 585 768 5600

Buyer Chantal Lavoie

Ship To Contact
Ship To Phone
Ship Via: YRC COLLECT
Ship Acct:

Customer POID

Customer Tax # 10127-2607

Terms Net 30

Currency USD

FOB FCA - (Free Carrier)

6 M4130NT0.750W.083 4130 RD Tube .750 x.083W 5/2/2017 20.00 \$3.85 \$77.00
Yes f *Rec'd 20.333 ft (1x)* *78.28*

MATERIAL: AISI 4130N SEAMLESS STEEL TUBING
AS PER MIL-T-6736 OR AMS 6371/6360/6361
6362/6373/6374

7 M6061T6T0.3125W.058 ALUM TUBE .3125 x .058W 5/2/2017 20.00 \$2.50 \$50.00
Yes f *Rec'd 20.333 ft (2x)* *60.00*

MATERIAL: 6061-T6/T62/T6510/T6511 SEAMLESS TUBING
AS PER WW-T-700/6 OR QQ-A-200/8 OR QQ-A-225/8 OR
AMS 4080 OR AMS 4082 OR AMS 4083 OR ASTM B210 OR
ASTM B241

Line Total: \$77.00

Line Total: \$50.00
SPY-5-2

Note:



Dart Aerospace Ltd.
1270 Aberdeen Street
Hawkesbury, ON K6A 1K7
Tel: 613 632 9577
Fax: 613 632 1053

PURCHASE ORDER

Purchase Order ID **PO36046**

Purchase Order Date 4/24/2017
PO Print Date 4/24/2017

Page Number 4 of 4

Order From :
TW METALS
PO BOX 933014
ALTANTA, GA 31193-3014
US

VU-TWM001

Ship To : DART AEROSPACE LTD
1270 ABERDEEN
HAWKESBURY, ON K6A 1K7
CANADA

Contact Name
Vendor Phone 585 768 5600

Buyer Chantal Lavoie
Customer POID
Customer Tax # 10127-2607
Terms Net 30
Currency USD
FOB FCA - (Free Carrier)

Ship To Contact
Ship To Phone
Ship Via: YRC COLLECT
Ship Acct:

8	71401-45	PROCUREMENT QUALITY CLAUSES	5/2/2017	1.00	\$0.00	\$0.00
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Procurement Quality Clauses
A005 right of entry
A012 chemical and physical test report
A016 personnel qualification
A017 raw material identification (as applicable)
A026 certification of material conformance
A041 quality management system
A042 dart notification by supplier
A043 retention of quality documents

5/2/2017
No

Line Total: \$0.00

Line Total: \$0.00

PO Total: \$743.00

Note: Terms & Condition of Purchasing(Suppliers) and Procurement Quality Clauses are an integral part of our AS9100 requirements. To learn in detail, please visit www.dartaerospace.com for further explanation.

Change Nbr: 1

Change Date: 4/24/2017